



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,121	08/16/2001	Lorenzo Casaccia	010345	4277

23696 7590 11/10/2003

Qualcomm Incorporated  
Patents Department  
5775 Morehouse Drive  
San Diego, CA 92121-1714

EXAMINER
----------

FERRIS, DERRICK W

ART UNIT	PAPER NUMBER
----------	--------------

2663

7

DATE MAILED: 11/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

KS

**Office Action Summary**

Application No.

09/932,121

Applicant(s)

CASACCIA ET AL.

Examiner

Derrick W. Ferris

Art Unit

2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 9/29/03.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-16 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-16,21-23 is/are rejected.
- 7) ☒ Claim(s) 19 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Amendment*

1. **Claims 1,3-16,19-23** as amended are still in consideration for this application. Applicant has amended claims 1, 5, 6, 7, 15, and 16. Applicant has added new claims 21-23.
2. Examiner **withdraws** the obviousness rejection to *Roobol et al.* in view of *Schramm et al.* for Office action filed 06/24/03. Please find a new rejection for the claims as necessitated by amendment.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 3-11, 15-16 and 21-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over “A proposal for an RLC/MAC Protocol for Wideband CDMA Capable of Handling Real Time and Non Real Time Services” to *Roobol et al.* (“*Roobol*”) in view of U.S. Patent No. 6,208,663 to *Schramm et al.* (“*Schramm*”) and U.S. Patent No. 6,173,431 to *Rittle*.

As to **claim 1**, *Roobol* discloses a proposal for a radio link control/medium access control (RLC/MAC) protocol for a W-CDMA system. Specifically, as shown in figure 1 of *Roobol*, there exists a segment layer (i.e., a LLC as is known in the art) and a fragment layer (i.e., a RLC/MAC as is known in the art) for a (BS), base station controller (RNC) and a mobile station (MS). Disclosed in section IV Radio Link Control and shown in figure 3 are the further claimed limitations of “segmenting a message into a plurality of segments” and “dividing the segments

Art Unit: 2663

into a plurality of fragments". For example, shown in figure 2 is one segment (i.e., a LLC Protocol Data Unit) that is further divided into a plurality of fragments called Radio Link Control (RLC) Protocol Data Units. Examiner places emphasis on page 108, right column which further discloses that "The LLC PDUs need to be segmented and then formatted into smaller blocks, RLC PDUs, suitable for transmission over the radio interface". Thus the final limitation "transmitting the fragments" is also taught by the reference.

Not clearly shown in figure 1 is a plurality of base stations. Examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention to have a plurality of base stations as is known in the art. The motivation for having a plurality of base stations is to segment a region (not to be confused with segmenting a message) into cells that can be serviced by a respective base station as is well known in the art prior to applicant's invention. For example, figure 3 of *Schramm* shows a plurality of base stations as is known in the art. In addition, what may be at issue between the examiner and the applicant is the further limitation of an active retransmission request. In particular, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to either retransmit the first segment if the segmentation is "active" or retransmit the plurality of segments that form a message if the segmentation is "inactive" using a reasonable but broad interpretation of "active" and "inactive". Specifically, *Roobol* discloses retransmitting PDU's over a radio interface in one or more radio frames (e.g., see block 206 in figure 10; column 3, lines 24-29; and column 7, lines 46-59]. In particular, *Roobol* discloses transmitting fixed size PDUs but is silent or deficient to whether all the PDUs are sent or whether some of the PDUs are sent (e.g., a first segment) while retransmitting the message (i.e., whether the transmission is "active" or "inactive"). Examiner

Art Unit: 2663

notes that it would have been obvious to one skilled in the art to transmit either some or all of the fixed size PDUs depending on the number of errors that have occurred on the link for each PDU.

*Rittle* cures the above-cited deficiency in the Background of the patent by disclosing that it is well known in the art prior to applicant's invention to request a retransmission of either a particular data block (e.g., a first segment) or an entire message [e.g., see column 1, lines 49-67].

Thus *Rittle* provides a support and motivation for either transmitting a first segment of the plurality of segments or the plurality of segments using a broad but reasonable interpretation of "active" and "inactive" (i.e., not clearly recited in the claims is how one defines whether segmentation is "active" or "inactive"). Examiner notes that *Roobol* provides a further motivation at column 7, lines 60-67.

As to **claims 3 and 4**, using a reasonable but broad interpretation of "segment parameter" and "segment indicator", *Roobol* discloses both in Section IV Radio Link Control starting on page 108 (e.g., both the LLC and RLC support ARQ).

As to **claims 5, 6, 7 and 8**, see the reasoning for the rejection of claim 1. In addition, *Roobol* discloses retransmitting the smallest retransmission unit which is the RLC PDU (i.e., retransmitting one of the plurality of fragments) [right-hand side, page 108].

As to **claim 9**, examiner notes that it would have been either inherent or obvious to determine the start and end of a segment based on the transmission of the RLC PDUs. Examiner notes support is shown in figure 3 on page 109 where a sequence number SN field is used to determine the beginning and end of a segment as is known in the art.

As to **claim 10**, *Roobol* further discloses that ARQ is possible at the LLC (i.e., segment layer) [Section IV Radio Link Protocol on page 108].

As to **claim 11**, in addition to the reasoning behind the rejection for claim 11, *Roobol* discloses sending both positive and negative acknowledgements as is known in the art.

As to **claim 15**, see the combined rejections for claim 1 and 2.

As to **claim 16**, see the combined rejections for claims 1 and 3.

As to **claim 21**, as either a block or the entire message can be retransmitted, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to use the segment indicator to determine if a segmentation is active or retransmission request. A motivation for using the segment indicator is that the segment indicator using e.g., the sequence number 32 shown in figure 9 of *Roobol* shows the sequence of the packets already transmitted.

As to **claims 22 and 23**, see the rejection for claim 1.

5. **Claims 12-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over "A proposal for an RLC/MAC Protocol for Wideband CDMA Capable of Handling Real Time and Non Real Time Services" to *Roobol et al.* ("*Roobol*") in view of U.S. Patent No. 6,208,663 to *Schramm et al.* ("*Schramm*") and U.S. Patent No. 6,173,431 to *Rittle*, and in further view of U.S. Patent No. 6,226,301 to *Cheng et al.* ("*Cheng*").

As to **claims 12-14**, *Roobol*, *Schramm*, and *Rittle* may be silent or deficient to storing a segment/fragment in a buffer. Examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention to store information regarding a segment and a segment in memory. Examiner notes the motivation for storing the information is to access whether a packet has been fully transmitted or not (i.e., information in general about the packet must be stored somewhere in order to determine whether a packet has

Art Unit: 2663

been fully transmitted or not). *Cheng* provides additional support by disclosing specific memory used to store the information [column 6, lines 57-67; column 7, lines 1-4].

***Allowable Subject Matter***

6. **Claims 19 and 20** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (703) 305-4225. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.


Art Unit: 2663

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 305-3900.

Derrick W. Ferris  
Examiner  
Art Unit 2663

  
DWF

  
CHI PHAM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600 4/5/03